Chapter 5

State(s): Oregon

Recovery Unit Name: Willamette River Recovery Unit

Region 1
U.S. Fish and Wildlife Service
Portland, Oregon

DISCLAIMER

Recovery plans delineate reasonable actions that are believed necessary to recover and protect listed species. Plans are prepared by the U.S. Fish and Wildlife Service and, in this case, with the assistance of recovery unit teams, contractors, State and Tribal agencies, and others. Objectives will be attained and any necessary funds made available subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities. Recovery plans do not necessarily represent the views or the official positions or indicate the approval of any individuals or agencies involved in the plan formulation, other than the U.S. Fish and Wildlife Service. Recovery plans represent the official position of the U.S. Fish and Wildlife Service *only* after they have been signed by the Director or Regional Director as *approved*. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and the completion of recovery tasks.

Literature Cited: U.S. Fish and Wildlife Service. 2002. Chapter 5, Willamette River Recovery Unit, Oregon. 96 p. *In*: U.S. Fish and Wildlife Service. Bull Trout (*Salvelinus confluentus*) Draft Recovery Plan. Portland, Oregon.

ACKNOWLEDGMENTS

Two working groups are active in the Willamette River Recovery Unit: the Upper Willamette (since 1989) and Clackamas Bull Trout Working Groups. In 1999, these groups were combined, and, along with representation from the Santiam subbasin, comprise the Willamette River Recovery Unit Team.

The following individuals contributed to developing the Willamette River Recovery Unit chapter.

Willamette River Recovery Unit Team:

Neil Armantrout, Bureau of Land Management
Chris Brun, Confederated Tribes of Warm Springs Reservation
Dave Bickford, U.S. Forest Service
Tim Cummings, U.S. Fish and Wildlife Service
Doug Cramer, Portland General Electric Company
Tim Downey, Eugene Water and Electric Board
Mary Hanson, Oregon Department of Fish and Wildlife
Tom Horning, U.S. Forest Service
Wayne Hunt, Oregon Department of Fish and Wildlife
Doug Larson, U.S. Forest Service
Dave Liscia, Oregon Department of Fish and Wildlife
Bob Magne, U.S. Army Corps of Engineers
Jim Muck, Oregon Department of Fish and Wildlife
Greg Pitts, Oregon Council Federation of Fly Fishers
Ramon Rivera, U.S. Forest Service
Tim Shibahara, Portland General Electric Company
Dan Shively, U.S. Forest Service
Wade Sims, U.S. Forest Service
Del Skeesick, Private citizen
Wayne Somes, U.S. Forest Service
Jim Stark, Weyerhaeuser Company
Greg Taylor, Oregon Department of Fish and Wildlife
Amy Unthank, U.S. Forest Service

Mark Wade, Oregon Department of Fish and Wildlife
Dave Ward, Oregon Department of Fish and Wildlife
Chuck Willis, U.S. Army Corps of Engineers
Jeff Ziller, Oregon Department of Fish and Wildlife

Additional Contributors:

Chris Allen, U.S. Fish and Wildlife Service
Tony Nigro, Oregon Department of Fish and Wildlife
Robert Danehy, Ph.D., Boise Corporation
Tim Whitesel, U.S. Fish and Wildlife Service
Steve Liebhardt, U.S. Fish and Wildlife Service
Willa Nehlsen, U.S. Fish and Wildlife Service

WILLAMETTE RIVER RECOVERY UNIT CHAPTER OF THE BULL TROUT RECOVERY PLAN

EXECUTIVE SUMMARY

CURRENT SPECIES STATUS

The Fish and Wildlife Service issued a final rule listing the Columbia River population of bull trout as a threatened species on June 10, 1998 (63 FR 31647). The Willamette River Recovery Unit (often called the Willamette Recovery Unit in this chapter) forms part of the range of the Columbia River population. The Willamette Recovery Unit encompasses the Willamette River basin, a major tributary to the Columbia River. The Willamette River flows through Portland, Oregon, before entering the Columbia River at about river kilometer 140. The Willamette River drains part or all of 10 counties—an area of approximately 31,080 square kilometers, almost one-eighth of Oregon's total area.

The Willamette Recovery Unit Team identified one core area, the Upper Willamette River core area, and the Clackamas River core habitat. The Clackamas River core habitat does not currently support bull trout populations, but it did historically, and the Recovery Unit Team believes that it has the necessary elements to support reintroduction of bull trout. The Santiam River basin also had historic bull trout populations, but this basin is not considered core habitat at this time because of uncertainties regarding its potential to support bull trout. Identifying adequate amounts and locations of suitable habitat in the Santiam River basin is a research need.

HABITAT REQUIREMENTS AND LIMITING FACTORS

A detailed discussion of bull trout biology and habitat requirements is provided in Chapter 1 of this recovery plan. The limiting factors discussed here are specific to the Willamette Recovery Unit chapter. At the time of listing, the U.S. Fish and Wildlife Service considered dams, forest management, roads, and water quality as threats to bull trout in the Willamette River basin. The construction of impassable dams and culverts is considered a major factor in the decline of the species, blocking

migratory corridors and altering temperature and flow regimes. Habitat degradation, passage barriers, overharvest, chemical treatment projects, and hybridization and competition with nonnative brook trout are possible suppressing factors for bull trout populations in the Willamette River basin. Alteration and degradation of instream habitat resulting in loss of instream structure, pools, and side-channel habitats are identified as limiting bull trout populations in the McKenzie and Middle Fork Willamette River basins. Causal mechanisms can be both manmade and natural and are difficult to quantify due to a lack of data on historic population abundance and habitat conditions.

Although much of the damage is historical and although current policies and practices are more protective of aquatic resources, the legacy effects of past events are still evident. What can be restored naturally—for example, riparian cover and recruitment of large woody debris—will require many years. In other instances where change may not be reversible—for example, impassable dams—other solutions will be required to address the threats to bull trout survival and persistence.

RECOVERY GOALS AND OBJECTIVES

The goal of the bull trout recovery plan is to **ensure the long-term persistence of self-sustaining, complex, interacting groups of bull trout distributed throughout the species' native range so that the species can be delisted**. To achieve this goal, the following objectives have been identified for bull trout in the Willamette Recovery Uni:

- Maintain current distribution of bull trout and restore distribution in previously occupied areas within the Willamette Recovery Unit.

- Maintain stable or increasing trends in abundance of adult bull trout.

- Restore and maintain suitable habitat conditions for all bull trout life history stages and forms.

- Conserve genetic diversity and provide opportunity for genetic exchange.

RECOVERY CRITERIA

Recovery criteria for the Willamette Recovery Unit reflect the stated objectives, evaluation of population status, and recovery actions necessary to achieve the overall goal.

1. **Distribution criteria will be met when bull trout are distributed among five or more local populations in the recovery unit: four in the Upper Willamette River core area and one in the Clackamas River core habitat.** In a recovered condition, the Upper Willamette River core area would include local populations in the mainstem McKenzie River (connectivity with the Trail Bridge local population would need to be established), South Fork McKenzie River, upper Middle Fork Willamette River, and Salt Creek/Salmon Creek/North Fork Middle Fork Willamette River complex. Core habitat in the Clackamas River basin would also contain one or more local populations in a location that has yet to be identified. Feasibility analyses are needed to assess the potential for reintroducing bull trout into historic habitat in the Middle Fork Willamette River basin (Salt Creek, Salmon Creek, and North Fork Middle Fork Willamette River watersheds) and into the Clackamas River core habitat. Additional population studies and a better understanding of bull trout fidelity to their natal streams are needed to further define local populations in the recovery unit.

2. **Abundance criteria will be met when estimated abundance of adult bull trout is from 900 to 1,500 or more individuals in the recovery unit, distributed in each core area as follows: 600 to 1,000 in the Upper Willamette River core area and 300 to 500 in the Clackamas River core habitat.**

3. **Trend criteria will be met when adult bull trout exhibit stable or increasing trends in abundance in the recovery unit, based on a minimum of 10 years of monitoring data.**

4. **Connectivity criteria will be met when migratory forms are present in all local populations and when intact migratory corridors among all local**

populations in core areas provide opportunity for genetic exchange and diversity. For the Upper Willamette River core area, meeting connectivity criteria would require establishing fish passage at Cougar, Trail Bridge, Dexter, Lookout Point, and Hills Creek Dams. In the future, establishing fish passage at dams in the Clackamas and Santiam River basins may be necessary, but currently, there is insufficient information to make that determination.

ACTIONS NEEDED

Recovery for bull trout will entail reducing threats to the long-term persistence of local populations and their habitats, ensuring the security of multiple interacting groups of bull trout, and providing habitat conditions and access to conditions that allow for the expression of various life history forms. Seven categories of actions needed are discussed in Chapter 1; tasks specific to this recovery unit are provided in this chapter.

ESTIMATED COST OF RECOVERY

Total cost for bull trout recovery in the Willamette River Recovery Unit is estimated at $26 million, spread over a 25-year recovery period. Total costs include estimates of expenditures by local, Tribal, State, and Federal governments and by private business and individuals. These costs are attributed to bull trout conservation but other aquatic species will also benefit. Cost estimates are not provided for tasks which are normal agency responsibilities under existing authorities.

ESTIMATED DATE OF RECOVERY

Time required to achieve recovery depends on bull trout status, factors affecting bull trout, implementation and effectiveness of recovery tasks, and responses to recovery tasks. A tremendous amount of work will be required to restore impaired habitat, reconnect habitat, and eliminate threats from nonnative species. Three to five bull trout generations (15 to 25 years), or possibly longer, may be necessary before identified threats to the species can be significantly reduced and bull trout can be considered eligible for delisting.